

DOCKET

07-AFC-9

DATE

RECD. JUN 03 2009

The following ~~statement scope~~ of work describes the proposal for a geoarchaeological assessment of the Canyon Power Plant Project, in Anaheim, California. The proposal is largely based on the research design outlined by the California Energy Commission in the May 2009 Preliminary Staff Assessment (pages 4.3-42 through -45), with some additional specificity. The results of the geoarchaeological study will allow the CEC to better assess the potential impacts of the proposed project to buried archaeological resources, and to design a more targeted, limited, and effective mitigation monitoring plan (if warranted by the results of the geoarchaeological study).

Task 1- Literature Review

Existing archaeological, geomorphic, Quaternary, and geological literature will be gathered and reviewed for information relevant to the project area and the greater Santa Ana River basin. This review will be used to establish a context for the geomorphology and landscape evolutionary history of the project area, and to assist in interpretation of field results.

Task 2- Geoarchaeological Field Study

A maximum of 50 linear meters (165 feet) of trench will be excavated across the proposed Power Block area, to a maximum depth of 3.87 meters (12.5 feet) below surface. A combination of formal trenches (at least 33.3% of the linear total) and pot-holing (66.6%) (smaller trenches not intended for human entry, approximately 10 feet long) will be used to gain the maximum coverage and subsurface exposure across the Power Block area. Formal trenches will be shored, so that the project geoarchaeologist can enter the trench, document subsurface stratigraphy and pedogenic indicators, in detail, and collect soil and dating samples. At least two formal cross-trenches (trenches at right angles to one another) will be opened and shored to identify lateral stratigraphic change across the project area. If stratigraphy different than that observed in the formal trenches, or archaeological deposits, are identified in the potholes, these will be extended into formal trenches and shored in order to allow adequate assessment of the deposits.

One sidewall of each formal trench will be selected for a measured profile drawing and a complete profile photograph with a metric scale photographs. These will include a detailed description of each lithostratigraphic and pedostratigraphic unit and be used to correlate units identified in other trenches and pot-holes.

A maximum of 64 radiocarbon samples per measured profile drawing will be submitted for analysis, in order to determine the depositional rates and approximate ages of the major process-related lithostratigraphic sequences present, and to constrain the dates of identified any paleosols and/or identified archaeological deposits that are found. Discrete, in-place charcoal samples will be used for dating. In the absence of such deposits, bulk humate samples from the upper horizons of paleosols will be submitted for AMS analysis.

Comment [Jr1]: Yes

Comment [mdm2]: 2 June 2009: Does this depth reflect a depth 50 cm deeper than the deepest project-related excavation proposed for the power block area, not including the sump area?

Comment [mdm3]: 2 June 2009: Percentages open for discussion

Comment [mdm4]: 2 June 2009: Please provide minimum dimensions of "pot-holing" units in parentheses

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At least one additional archaeologist will be on-site to assist in the monitoring and sorting of spoils excavated from the geoarchaeological trenches. Rakes and other hand tools will be used to actively sort through material as it is excavated from ~~the each~~ trench. The ~~Project~~ Geoarchaeologist¹ will assist in identifying paleosols as they are excavated, and these will be targeted for monitoring. Additionally, a small ~~((three 5-gallon buckets))~~ amount of material from each found identified lithostratigraphic unit or major process-related lithostratigraphic sequence ~~(except gravel and cobble rich high-energy deposits with little or no potential for preservation of in-situ archaeological material)~~ in each of the profiles subject to measured drawing, and from the A Horizon of each found pedomstratigraphic unit, will be removed from the ~~sidewall of formal trenches~~ profile wall and screened through ¼-inch hardware mesh. Where lithostratigraphic units or major process-related lithostratigraphic sequences are demonstrably high-energy deposits of large gravel that range in size from pebbles to boulders, no screening will occur, as such deposits have virtually no potential to preserve primary artifact and ecofact associations. Where such lithostratigraphic units or sequences, or pedomstratigraphic units are not apparent, the same amount of material will be screened through the same size mesh from 50-cm-thick arbitrary levels down the wall of each profile.

Comment [mdm5]: 3 June 2009: Jay I recast your parenthetical insert above as this sentence:

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The Project Geoarchaeologist shall mechanically excavate through any buried archaeological deposits encountered, unless such deposits contain human remains, using arbitrary levels no greater than 20 cm thick, screen the arbitrary levels through ¼-inch hardware mesh, and provenience all artifacts, ecofacts, and other material culture finds to those arbitrary levels. ~~Any archaeological deposits discovered~~ found during the trenching activities will be recorded on DPR 523 forms. Formal evaluation of site eligibility and/or data recovery is beyond the current scope. The geoarchaeological study is not designed to assess eligibility of an archaeological site. Additional scoping and consultation with the CEC will be necessary to complete Phase II analysis of any identified archaeological deposits.

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Task 3- Reporting

A report describing the results of the literature review and the geoarchaeological field study will be produced. This report will include mapping of the surface geomorphology of the project area (map scale of ≥1:12,000), maps and descriptions of all excavated trench locations, ~~and~~ graphic and written descriptions of the master ~~pedostratigraphic~~ column of the project area to the maximum depth that ground disturbance will occur including an analysis of the depth and extent of any potentially sensitive paleosols, a processual geologic interpretation and the approximate age of subdivisions of the master column that reflect shifts in local depositional regimes or depositional history, and that reflect time ranges that correspond to the prehistory and history of the region, as presently understood. DPR 523 forms, ~~and~~ descriptions, and preliminary interpretations of any encountered archaeological deposits ~~will be included in the report.~~ Formal reporting of radiocarbon analysis results will be included as an appendix. The

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¹ Project Geoarchaeologist shall meet the qualification standards of Condition of Certification CUL-1 in the April 2009 preliminary staff assessment for the subject proposed project.

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report will also provide a preliminary interpretation of the character of the prehistoric or historic land use that each encountered archaeological deposit represents, an interpretation, with reference to the information gathered and developed above, of the likelihood that buried archaeological deposits are present in each of the subdivisions in the master column, and, on the basis of the current understanding of the prehistory and history of the region, what site types are most likely to be found, and recommendations, based on the present geoarchaeological study, on the locations and extent (horizontal and vertical) of archaeological monitoring required, for the different subdivisions of the master column, prescribing how much monitoring at what locations and depths in the project area would be most consistent with CEQA requirements for mitigation of impacts through avoidance, when possible, and with the historic preservation goal of recovering valid scientific data from CRHR-eligible archaeological deposits whose destruction cannot be avoided, an analysis of the depth and extent of any potentially sensitive paleosols, as well as recommendations for appropriate construction monitoring.

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Assumptions:

* Excavation will not occur in contaminated soils (as defined in Phase I and II on site investigations, previously submitted to CEC staff). Maximum required PPE of Level D (hardhat, steel toe boots, safety vest, etc.).

Comment [bcb6]: 6/3/09. Jay, you can leave this in or delete it—your choice. From my review of the Phase II Environmental Site Assessment, it does not appear that there is significant soil contamination in the proposed power block area, so the safety equipment you list should be sufficient. When choosing locations for "potholes," you should avoid the TPH-contaminated areas along the north end of the project site. B. Bastian

Comment [mdm7]: 2 June 2009. Please define "contaminated," and clarify "PPE of Level D."

Comment [jr8]: This whole assumption may not even be appropriate in this proposal. unnecessary information. Delete?



**BEFORE THE ENERGY RESOURCES CONSERVATION AND DEVELOPMENT
COMMISSION OF THE STATE OF CALIFORNIA
1516 NINTH STREET, SACRAMENTO, CA 95814
1-800-822-6228 – WWW.ENERGY.CA.GOV**

**APPLICATION FOR CERTIFICATION
FOR THE *CANYON POWER*
*PLANT PROJECT***

Docket No. 07-AFC-9

PROOF OF SERVICE

(Revised 2/25/2009)

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DECLARATION OF SERVICE

I, Teraja` Golston, declare that on June 4, 2009, I served and filed copies of the attached Canyon Anaheim (07-AFC-9) Staff Comments(Part 2) on Proposed Geo-Arch Study. The original document, filed with the Docket Unit, is accompanied by a copy of the most recent Proof of Service list, located on the web page for this project at: **[<http://www.energy.ca.gov/sitingcases/canyon/index.html>]**. The document has been sent to both the other parties in this proceeding (as shown on the Proof of Service list) and to the Commission's Docket Unit, in the following manner:

(Check all that Apply)

For service to all other parties:

✓ sent electronically to all email addresses on the Proof of Service list;

✓ by personal delivery or by depositing in the United States mail at Sacramento, California with first-class postage thereon fully prepaid and addressed as provided on the Proof of Service list above to those addresses **NOT** marked "email preferred."

AND

For filing with the Energy Commission:

✓ sending an original paper copy and one electronic copy, mailed and emailed respectively, to the address below (preferred method);

OR

_____ depositing in the mail an original and 12 paper copies, as follows:

CALIFORNIA ENERGY COMMISSION

Attn: Docket No. 07-AFC-9
1516 Ninth Street, MS-4
Sacramento, CA 95814-5512

docket@energy.state.ca.us

I declare under penalty of perjury that the foregoing is true and correct.

Original signed by _____

Teraja` Golston